

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

TECHNICAL NOTES

LIBRARY
CURRENT SERIAL RECORD

LAKE STATES FOREST EXPERIMENT STATION

U. S. DEPARTMENT OF AGRICULTURE · · FOREST SERVICE

1,9
F7625T
Cop. 2

No. 563

U. S. DEPARTMENT OF AGRICULTURE

Sawtimber Log Grades in Wisconsin

Log grades are a measure of sawtimber quality and value. The grade distribution of the sawtimber resource in an area indicates the type of industry it can support now and in the near future.

A special study made in 1953 provided log grade data for northwestern, northeastern, and central Wisconsin. Information for southern Wisconsin was taken during the regular forest survey in 1956 and 1957. These data are the result of a cooperative effort by the Lake States Forest Experiment Station, the Wisconsin Conservation Department, and others participating in the Wisconsin Forest Inventory. The sample consisted of 1,112 trees. This was sufficient to provide usable proportions of volume by log grade for 10 major species (table 1).

Table 1.--Percent of merchantable volume in each log grade, by major species, Wisconsin

Species	Volume		Percent by log grades ^{1/}		
	in sample		No. 1	No. 2	No. 3
	bd. ft.				Tie & timber
<u>Conifers</u>					
White pine	6,300	36	33	31	-
Red pine	4,300	20	26	54	-
<u>Hardwoods</u>					
Sugar maple	22,900	22	21	36	21
Basswood	17,400	19	23	36	22
American elm	10,500	24	30	27	19
Slippery elm	7,200	18	38	30	14
Red oak	43,800	10	20	35	35
Black oak	4,600	7	11	12	70
White oak	11,800	5	11	40	44
Ash	6,800	7	35	41	17

1/ For specifications see: Hardwoods--Hardwood Log Grades for Standard Lumber, U. S. Forest Prod. Lab. Rpt. D-1737, 60 pp., Madison, Wis., 1953; and Interim Specifications for Ties, Timbers, or Construction Material (unpublished), U. S. Forest Serv., Wash., D.C., 1948. Softwoods--Official Grading Rules for Northern Hardwood and Softwood Logs, Northern Hemlock and Hardwood Mfrs. Assoc., 12 pp., Oshkosh, Wis., 1943 (softwood log grades of Prime, No. 1, and No. 2 correspond to log grades No. 1, No. 2 and No. 3 above respectively).

The way log grades affect yields of high-quality (and high-value) lumber can best be shown by example. For red oak the proportion of No. 1 common or better lumber that can be sawn from a grade 1 log is about 70 percent, from a grade 2 log about 44 percent, and from a grade 3 log about 21 percent.

ROBERT N. STONE, Research Forester
CLARENCE D. CHASE, Research Forester
Lake States Forest Experiment Station

(Over)

JULY 1959

A grade 2 red oak log is worth roughly three-fourths as much as a grade 1 red oak log with the same dimensions; a grade 3 log is worth about half as much as a grade 1 log.^{1/}

The proportion of merchantable volume in the two top grades provides a means of comparing timber quality of several species by survey districts (table 2). Quality of the pines is best in the north. Quality of the hardwood species varies but for most of the species shown is best in northeastern Wisconsin.

The effect of tree size on log grade is illustrated by sugar maple. Over two-thirds of the sawtimber volume of this species in Wisconsin is in trees 16 inches and larger at breast height (table 3). Ninety-six percent of grade 1 logs and 70 percent of grade 2 logs were in these larger trees. Low grades predominate in the 12- to 14-inch diameter classes; high grades in the larger size trees.

^{1/} Hardwood log grades for standard lumber, U. S. Forest Prod. Lab. Rpt. D-1737, 60 pp., Madison, Wis., 1953.

Table 2.--Proportions of merchantable volume in grades 1 and 2 logs in Wisconsin by major species and survey districts

Species	: Percent of merchantable volume in grades 1 and 2 logs				
	: Entire state	: North western Wisconsin	: North eastern Wisconsin	: Central Wisconsin	: Southern Wisconsin
	: : Wisconsin	: Wisconsin	: Wisconsin	: Wisconsin	: Wisconsin
	: : Wisconsin	: Wisconsin	: Wisconsin	: Wisconsin	: Wisconsin
<u>Conifers</u>					
White pine	69	77	71	52	(1/)
Red pine	46	52	45	39	(1/)
<u>Hardwoods</u>					
Sugar maple	43	18	61	54	25
Basswood	42	26	50	52	35
American elm	54	61	36	75	36
Slippery elm	57	(1/)	67	(1/)	42
Red oak	30	24	58	34	26
White oak	16	-	42	13	17
Ash	42	72	37	30	31

^{1/} Sample too small to be representative.

Table 3.--Distribution of sugar maple sawtimber by log grades in three diameter groups, Wisconsin

D.b.h. classes (inches)	(In percent)				
	Log grades				
	All grades	No. 1	No. 2	No. 3	Tie & timber
<u>Distribution within log grade</u>					
12-14	28	4	30	35	38
16-18	55	68	46	54	53
20+	17	28	24	11	9
Total	100	100	100	100	100
<u>Distribution within diameter group</u>					
12-14	100	3	23	46	28
16-18	100	27	18	35	20
20+	100	36	29	24	11
All trees	100	22	21	36	21